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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/901,293      | 07/09/2001  | Michael M. O'Toole   | 17586A USA          | 2795             |

7590 10/21/2003

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| EXAMINER |
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DOAN, JENNIFER

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| ART UNIT | PAPER NUMBER |
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2874

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/901,293             | O'TOOLE ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Jennifer Doan          | 2874                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-35 and 37-45 is/are allowed.
- 6) ☒ Claim(s) 36 and 46-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0703</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

This application is a continuation of PCT/US00/30525 filed on November 03, 2000.

### ***Drawings***

2. The drawings, filed on 07/09/2001, are accepted by examiner.

### ***Specification***

3. Claims 6, 7, 10, 15, 17, 19, 20, 41, 45 and 47 are objected to because of the following informalities: Claims do not end in period.

Appropriate correction is required.

Applicants' cooperation is requested in correcting any other errors of which applicants may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 36, 46, 47 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Munoz-Bustamante et al. (U.S. Patent 6,229,712 B1).

Regarding claim 36, Munoz-Bustamante et al. disclose, Figs. 5 and 6, a unitary optical block (69) for use in an optoelectric module to transmit optical signals between a multi-fiber assembly and a plurality of OEDs, the optical block comprising a molded material (column 4, lines 51-65) having optical alignment features to provide x, y alignment of the multi-fiber assembly (51, 61) and at least z-alignment of the OED (59, 60) and all alignments therebetween as shown in Figs. 5 and 6.

Regarding claims 46, 47 and 49, Munoz-Bustamante et al. disclose a method of assembling an OE module comprising providing an optical subassembly containing substantially all of the optical alignments from a cable (51, Fig. 5) assembly interface to at least one OED (60, Fig. 5) including the optical alignment of the OED; assembling the module to the extent that a circuit board (7, Fig. 5) to which the OED is to be connected is held rigidly in relation to the optical assembly (column 3, lines 1-27) and electrically connecting the OED to the circuit board (column 3, lines 28-34); further connecting a fiber assembly connector to the optical block using a clam shell connector and the circuit board is held in relation to the optical assembly by connecting the circuit board to the clam shell connector (column 3, lines 28-40).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munoz-Bustamante et al. as cited above.

Munoz-Bustamante et al. disclose all the limitations of the claimed invention except for a receptacle for receiving the OE device as recited in claim 48. However, the receptacle is considered to be obvious, since the receptacle is commonly used in an optical communication system for housing and protecting an optical device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Munoz-Bustamante's device with a receptacle to dispose an optical device in it. Doing so would obtain more protection for the optical device.

8. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munoz-Bustamante et al. as cited above in view of Isaksson (U.S. Patent 6,394,664).

Munoz-Bustamante et al. disclose all the limitation of the claimed invention except for the OED having a lead frame and the circuit board being held to the lead frame as recited in claim 50. However, the lead frame is well known in the art as taught by Isaksson. Isaksson teaches a lead frame (37, fig. 2) used in an optoelectronic device on the optoelectronic board for helping in an optical connection and alignment.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Munoz-Bustamante's device with a lead frame (accordance with the teaching of Isaksson). Doing so would supportedly build up a strong connection.

***Allowable Subject Matter***

9. Claims 1-35 and 37-45 are allowed.

The prior art of record fails to disclose or reasonably suggest an optoelectric module having x, y and z axes comprising a plurality of OEDS for converting between optical and electrical signals; and optical paths wherein each optical path has a first end adapted for optically coupling with a corresponding fiber in the x, y array of a multi-fiber assembly interconnected with said connector interface, and a second end for optically coupling with a corresponding OED, wherein ***the distance between the second ends of at least two optical paths is greater than the distance between their corresponding first ends and wherein the distance across the second ends along the x-axis is no greater than the distance across the first ends along the x-axis*** as recited in claim 1.

The prior art of record also fails to disclose or reasonably suggest an optical subassembly comprising ***a unitary structure of an optically-clear moldable material;*** at least one reflective surface disposed along one or more optical paths to alter the direction of said optical paths, wherein the optical paths are parallel between the first lens and the reflective surface; ***a plurality of OED receptacles for receiving the***

**OEDs**, each OED receptacle including one of said second lenses; **and at least one alignment member for aligning each fiber end of a multi-fiber array with a first lens; and a plurality of OEDs mounted in the OED receptacles**, each OED being optically coupled to one of the second lenses; wherein **the distance between adjacent second lens is greater than the distance between their corresponding first lenses** and wherein **the distance across the second lenses along the x-axis is no greater than the distance across the first lenses along the x-axis** and further wherein **a partially-reflective surface is at an angle to the transmitting optical path such that the optical path of the reflected portion of light is not coaxial to the transmitting optical path and is incident upon a monitor for controlling the output of the light-emitting OED** as recited in claims 21, 35, 37 and 38.

### **Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hanson, Richard J. (U.S. Patent 4,075,477 A) discloses connecting an interfacing means between the end of an optical signal conduit and electrical apparatus. Gipson et al. (U.S. Patent 4,732,446 A ) disclose a printed circuit board having an optical data buss. Denkin et al. (U.S. Patent 4,186,994 A), Blonder et al.(U.S. Patent 4,897,711 A), Raskin et al. (U.S. Patent 5,657,409 A), Van Roemburg et al. (U.S. Patent 5,740,293 A), Lee et al. (U.S. Patent 6,253,004 B1), Andersen et al. (U.S. Patent 6,513,992 B2) and Arsenault et al. (U.S. Patent 6,601,998 B2) disclose a connection between an electrooptic device and an optical fiber. And Bowen et al. (U.S.

Patent 5,487,124) disclose light paths from the laser to the optical fiber and from the optical fiber to the detector; however, this structure is not **a unitary structure of an optically clear moldable material.**

11. The prior art documents submitted by applicant in the Information Disclosure Statement filed on 07/03/03, have all been considered and made of record. (Note the attached copies of form PTO-1449).

12. Any inquiry concerning the merits of this communication should be directed to Examiner Jennifer Doan whose telephone number is (703) 308-6179. The examiner can normally be reached on Monday to Thursday from 6:00am to 3:30pm, second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick, can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*Jennifer Doan*

JD

October 14, 2003

*John D. Lee*  
John D. Lee  
Primary Examiner